

## **HIROSHIMA:**

### **CULMINATION OF STRATEGIC BOMBING, BEGINNING OF NUCLEAR OMNICIDE<sup>1</sup>**

#### **The Evolution of American Strategic Bombing, 1939-1945**

On September 1, 1939, the day on which Hitler invaded Poland, President Franklin Delano Roosevelt issued an appeal to Great Britain, France, and Germany to abstain from using airplanes to attack cities and innocent civilians. Referring primarily to the air bombardment of cities during World War I, which had killed thousands of noncombatants, Roosevelt wrote that "The ruthless bombing from the air of civilians in unfortified centers of population during the course of the hostilities...has sickened the hearts of every civilized man and woman, and has profoundly shocked the conscience of humanity." He urged "...every Government which may be engaged in hostilities publicly to affirm its determination that its armed forces shall in no event, and under no circumstances, undertake the bombardment from the air of civilian populations or of unfortified cities."<sup>2</sup> In response, two weeks later, British Prime Minister Neville Chamberlain told the House of Commons: "Whatever the lengths to which others may go, His Majesty's Government will never resort to the deliberate attack on women and children and other civilians for purposes of mere terrorism."<sup>3</sup>

By the end of the war, however, both the United States and Great Britain resorted to the very practices which they had earlier repudiated as being unworthy of civilized, democratic nations. Both nations started the air war with a policy of carefully avoiding civilian casualties, and both ended by using incendiary bombs to deliberately set crowded German and Japanese cities on fire. American preparations for the air war began years before the Japanese attack against Pearl Harbor on December 7, 1941. As early as September 1938, during the Munich crisis, the United States initiated a rapid expansion in the production of military aircraft. By 1940, and even more in 1941, massive quantities of planes and other equipment were sold to Great Britain under very favorable terms and ferried across the Atlantic by American crews. Although in pre-Pearl Harbor days there existed a strong isolationist sentiment among the American citizenry, many of the top military and political leaders, particularly President Roosevelt, felt that U.S. entry into the war was inevitable. The first formal talks between the United States and Great Britain on strategy for combined air operations took place during March 1941. It was concluded that a massive air offensive against Germany would be a necessary prerequisite for an eventual Allied land invasion of Europe. President Roosevelt's enthusiasm for air warfare helped pave the way, in June 1941, for

a reorganization of U.S. military forces, including the creation of the Army Air Forces, which gave the air arm of the military more autonomy and priority than it had previously enjoyed.<sup>4</sup>

### **Commitment to Daylight, Precision Bombing**

U.S. strategic bombing policy crystallized during July 1941, when a newly-formed U.S. Army Air Forces task force called the Air War Plans Division developed a comprehensive plan for the use of American air power to help defeat Germany. The resulting plan, known as AWPDP-1, specified that the U.S. contribution to victory would be attained through daylight, precision bombing of carefully designated military and military-industrial targets. One goal would be to neutralize the German air force, but the highest priority was the destruction of the Germany economy, particularly power plants, transportation resources, and oil facilities. AWPDP-1 envisioned an assault by 4,000 U.S. bombers that would "...in six months bring much of her [Germany's] vital industry to ruin."<sup>5</sup> It was such assumed that bombing would pave the way for an Allied land invasion of the continent, although some air force planners felt that after a successful bomber offensive "...a land offensive may not be necessary."<sup>6</sup>

As early as January 1941, British air force officers had informally suggested that the U.S. employ area bombing should war occur, but the American planners rejected the notion. According to the official historians of the U.S. strategic air offensive, one factor in the decision was the perception of "...widespread antipathy toward attacks on 'civilian' objectives."<sup>7</sup> However, while the official, public posture of the U.S. air forces focused on precision bombing of specific military-industrial targets in Europe, some air war planners were in fact advocating incendiary, area attacks against Japan. On November 15, 1941 - before the Japanese attack against the U.S. naval base at Pearl Harbor - General George C. Marshall, Chief of Staff of the U.S. Army, told a group of reporters, after swearing them to secrecy, that if war with Japan broke out, "...we'll fight mercilessly. Flying fortresses [the four-engined B-17 bomber used by the United States against targets in Europe] will be dispatched immediately to set the paper cities of Japan on fire...There won't be any hesitation about bombing civilians - it will be all-out."<sup>8</sup> Between January 14 and 24, 1943, British and American military and political leaders met in the Moroccan city of Casablanca to plan a combined air offensive against Germany. Roosevelt and Churchill decided that, for the time being, bombing was the only feasible means by which the Allies could directly aid the Russians, who were suffering heavy casualties in ground combat. They also decided that air supremacy over Germany was essential for the anticipated land invasion by Allied forces. The British tried to



persuade the Americans to adopt their night-time, area bombing techniques, but the Americans insisted on a daylight, precision approach. In the end, the British decided to continue their night offensive, and the Americans would bomb by day.<sup>9</sup>

### "Operation Gomorrah": The Fire Raid Against Hamburg

Throughout most of 1943, U.S. bombers maintained their policy of daylight, precision bombing of specific military targets in Germany and German-occupied western Europe. When they cooperated with the British, as in the combined raids against Hamburg in late July, the U.S. planes attacked only precision targets. However, as Michael Sherry has pointed out, the firestorm created by the British incendiary attack "...was carefully studied by American experts, particularly with an eye to the bombing of Japan."<sup>10</sup> On July 24-28, 1943, British and American bombers combined forces in a series of devastating attacks on the German city of Hamburg. Code-named "Operation Gomorrah," the official intent of the attacks was "the total destruction" of the city.<sup>11</sup> In keeping with division of labor established at the Casablanca Conference, the American bombers conducted daylight raids aimed at precise military-industrial targets. They achieved only modest results, accounting for only about one percent of the destruction. However, the British night area attacks, particularly on the evening of July 27-28, killed 45,000 people, which was the single greatest death toll in a bombing raid thusfar in the war.<sup>12</sup>

Unlike previous incendiary raids, the Hamburg attacks created what was, in effect, a tornado of fire in the heart of the city. The countless fires started by the thousands of incendiary bombs converged to form "...a concentrated mass conflagration that burned with increasing intensity."<sup>13</sup> The air above the fires became so hot that it created a powerful suction that drew fresh air from outside the burning area into the core of the fire, thereby intensifying the heat and expanding the area of the firestorm. From the air, the crews in the bombers looked down in amazement at what they had created. One airman recalled, "As far as I could see was one mass of fire. 'A sea of flame' has been the description and that's an understatement. It was so bright that I could read the target maps and adjust the bomb-sight." Another was "...amazed at the awe-inspiring sight of the target area. It seemed as though the whole of Hamburg was on fire from one end to the other and a huge column of smoke was towering well above us - and we were on 20,000 feet! It all seemed almost incredible and, when I realized that I was looking at a city with a population of two millions, or about that, it became almost frightening to think of what must be going on down there in Hamburg."<sup>14</sup>

Why the US wanted, then, on Germany? if fire was contemplated  
 for Japan from outset? Russia? German-Americans (vs. former-US?)  
 threat vulnerability? lack of alternatives?

On the ground, the conditions were hellish. In his book, *The Night Hamburg Died*, Martin Caidin posed the questions: "How can you describe the heat in Hamburg tonight? How do you describe temperatures that reach to more than 1400 degrees Fahrenheit? At this temperature lead becomes a bubbling fluid, aluminum has long since run as a liquid. This is a heat so great that it explodes wood subject to its murderous touch."<sup>15</sup> People died in many different ways. The majority succumbed to carbon monoxide poisoning or suffocation. According to Gordon Musgrove:

In the firestorm it actually hurt to breathe; the air was hot rather than merely warm, and it was drawn in down a parched throat into lungs which were straining for oxygen but being fed smoke and often phosphorus fumes. At a time when the brain required richly oxygenated blood to help it perform the clearest thinking, it was receiving an increasingly polluted supply. As conditions worsened so the ability of the individual to deal with them decreased.<sup>16</sup>

Others were turned into human torches by the intense heat. There were reports of babies being torn by the high winds from their mothers' arms and sucked into the flames. Many died trapped in the burning wreckage of buildings. Upon entering many basement air-raid shelters, would-be rescuers found nothing but bones suspended in congealed fat. Some people managed to make their way to the numerous waterways and canals that crisscrossed the city of Hamburg, but even that did not guarantee survival. Treading water, or standing in neck-deep water, they were still assaulted by the intense heat.<sup>17</sup>

The bombers deliberately hampered fire-fighting efforts by mixing various types of high explosive (HE) bombs among the incendiaries. Musgrove quotes from the post-raid report by the Police President of Hamburg: "This constantly alternating dropping of HE bombs, land mines, and incendiary bombs made possible an almost unimpeded spread of fires."<sup>18</sup> Operation Gomorrah succeeded in burning 13 square miles of the city of Hamburg.<sup>19</sup> Of the 45,000 people killed, it has been estimated that 50 percent were women and children and many of the men killed were elderly, above military age.<sup>20</sup> For weeks after the raids, survivors were plagued by "...droves of vicious rats, grown strong by feeding on the corpses that were left unburied within the rubble as well as the potatoes and other food supplies lost beneath the broken buildings."<sup>21</sup> As had been the case with the British daylight raids, however, the American daylight raids proved increasingly costly, as the Germans improved their anti-aircraft and fighter defenses. In July and August 1943, American casualties mounted steadily. On August 17, for example, of the 376 U.S. bombers that flew from their bases in England to hit a factory in Schweinfurt that produced ball-bearings and a fighter-plane factory in Regensburg, 60 were destroyed, mainly by German fighters. U.S. losses peaked during what came to be called the "black week" of October 9-14, 1943. Several attacks incurred high losses, including another attack against the ball-bearing factories in Schweinfurt on which 20% of



the U.S. planes were destroyed. If sustained, such a rate of attrition would have quickly exhausted American resources and brought the offensive to a standstill.<sup>22</sup>

### Erosion of the Commitment to Precision Bombing

In response to such intolerable losses, on November 1, 1943, the commander of the U.S. Army Air Forces, General Henry H. Arnold, ordered American bomber crews to use radar to aim bombs at the general area of specified targets when weather conditions made visual identification difficult or impossible. An added benefit of this practice of "blind bombing" was that raids could be carried out at night as well as under weather conditions that hampered German fighters.<sup>23</sup> In effect, this directive moved U.S. targeting policy in the direction of area bombing. "Blind bombing" by means of radar aids, combined with greatly increasing bomb loads and, later in the war, weakened German defenses, meant that residential areas in the vicinity of "military" targets were very frequently devastated. By October 1944, approximately 80% of the U.S. bomber raids over Germany were conducted by means of blind bombing. According to the official historians, such bombing "...depended for effectiveness upon drenching an area with bombs."<sup>24</sup> According to Michael Sherry, "By 1944, the two air forces were positioned to cross paths. The RAF [British Royal Air Force] was developing techniques that gave the night bombers a precision approaching that of the AAF's [U.S. Army Air Forces] Fortresses and Liberators, while the Americans were beginning to loosen their definition of precision bombing."<sup>25</sup> The use of "nonvisual techniques" by U.S. bombing forces, conceded Conrad C. Crane in his study of the evolution of American airpower strategy, "did contribute to the escalation toward total war that would culminate in the Pacific."<sup>26</sup> Actually, the "loosening" noted by Sherry had begun well before November 1944. Beginning in January 1944, the British and Americans initiated an air campaign against Bulgaria and Romania, Nazi allies in the Balkans, that killed thousands of civilians. Although the British bombed at night, while the Americans attacked during the day, the numbers of American planes, the sheer tonnage of their bombs, and the fact that their designated targets were located in the middle of residential areas <sup>collateral damage</sup> caused massive casualties. On April 4, 1944, for example, when 300 American bombers struck railroad assembly yards in Sofia, Bulgaria, "The highest concentration of bombs landed not on the rail facilities but on Sofia itself."<sup>27</sup> Ronald Schaffer concluded from his study of this relatively little-known campaign that, "American flyers were expected to terrorize Balkan civilians without appearing to use terror tactics."<sup>28</sup>

why?  
to mass murder?

x US killed (mostly) people within vicinity (5 mi?)  
of factories; UK, killed people outside  
factories.

On June 9, 1944 - just three days after the Allied landing at Normandy, France - one of the top American air force officers ordered plans drawn up for masses of American planes to drop both incendiary and high explosive bombs on "undefended" and "virgin" towns in Germany that were of minimal military or industrial significance. The plans also called for "...maximum use of strafing fighters...to spread the impact on the population."<sup>29</sup>

Not only were American air war planners increasingly willing to accept "inadvertent" collateral damage to civilians, but they were also more willing to consider explicit "morale" targeting, i.e. attacks deliberately planned to hurt civilians. The last major U.S. bombing raids in the European theater took place on February 3, 1945, where more than 900 U.S. bombers struck Berlin with such effectiveness that as many as 25,000 people were killed.<sup>30</sup> Then, ten days later, U.S. bombers J. 13 cooperated with the Royal Air Force in carrying out one of the most deadly and controversial raids of the war, the attack on Dresden. After night incendiary attacks by the British bombers had created vast firestorms, the bombing and strafing raids of the U.S. planes on the following day seriously handicapped fire-fighting and rescue efforts and contributed to the high death tolls.

### U.S. Strategic Bombing Against Japan

Although the U.S. bombing campaign in the Pacific was guided by the same directives that governed the air war in Europe, i.e., the principle of daylight, precision bombing, the first American bomber attack on Japan was originally planned to take place at night against military count targets surrounded by residential areas.<sup>31</sup> The raid, led by General James Doolittle, occurred on April 18, 1942. It involved 16 B-25 bombers brought within striking distance of Japan on the aircraft carrier Hornet. The plan for night attack was disrupted when the carrier task force was sighted by a Japanese patrol vessel about 800 miles from Japan, and the planes were dispatched shortly after noon, rather than under cover of darkness. The planes, dropping both high explosive and incendiary bombs, damaged factories and military installations in several Japanese cities, but many bombs also "...scattered into dense residential districts."<sup>32</sup> Caleb Carr notes that "[like] the later and vastly more extensive firebombing of German cities and numerous other long-range punitive actions undertaken during the war, the [Doolittle] raids demonstrated that the United States and its allies were perfectly capable of acting in a manner that they claimed to be trying to eradicate."<sup>33</sup> War on Terror - WWII  
After dropping their bombs, the planes were to fly to bases in China, but several became lost and were forced to land in Japanese-occupied territory. Eight American airmen were captured by the Japanese. Three were executed and five sentenced to prison for the rest of their lives.<sup>34</sup> Though the

*See Doolittle Report - war tactics of enemy*



actual physical damage caused by the Doolittle raid was relatively minor, the raid was a morale booster for the American military and public still smarting from the humiliation of Pearl Harbor. Following the Doolittle raid, there was a prolonged lull in the U.S. air offensive against the Japanese home islands, both because the European theater had been assigned first priority and because the sheer distances involved posed temporarily insurmountable logistics problems. The lull continued until the United States was able to capture territory sufficiently close to Japan to serve as air bases and was able to bring into operation the massive, long range B-29 bomber, which was originally designed in 1940 and flown for the first time in September, 1942. Throughout 1943, American bombing efforts concentrated on the European theater, while U.S. naval forces contained and then began to roll back the Japanese advances in the Pacific.

By 1944, however, the United States was ready to resume bombardment of the Japanese home islands. This was primarily due to two factors: the availability of large numbers of the new B-29 bombers and the acquisition of bases from which to launch them. These bases were in two, quite different areas. The first was in the Chengtu province of China that was under the control of Chinese forces friendly to the United States. The second, and by far the most important and successful, consisted of a number of islands in the 500 mile-long Marianas chain in the South Pacific Ocean which had to be wrested by U.S. marines from the Japanese in some of the bloodiest ground combat of the entire war.

### **Precision Attacks from the Island Bases**

In March 1944, the American Joints Chiefs of Staff had given orders to the U.S. Navy to prepare to capture the Japanese-occupied Marianas, located about 1200 miles from the Japanese home islands, and well within range of the new bombers. On June 15, 1944 - the very day of the first B-29 strike from the China bases - U.S. forces invaded the pivotal island of Saipan. Approximately 20,000 American soldiers stormed ashore to confront an entrenched, numerically superior enemy that was determined to defend the island at all costs. The fighting lasted for several weeks, during which the U.S. troops had to fight off suicidal "banzai charges" by the Japanese, one of which is described by Martin Caidin: "Four thousand fanatical, screaming soldiers, each man sworn to 'take seven lives to repay our country,' charged the Marine and Army troops. They carried everything from machine guns to knives and bayonets tied to the ends of long bamboo poles, and they stormed the battle-weary GI's with a howling fury."<sup>35</sup> The final death toll was staggering. According to Dower, "...almost 30,000 of the emperor's men were sacrificed on Saipan (slightly less

than ten times the U.S. death count)."<sup>36</sup> After securing Saipan, U.S. forces moved forward to capture other islands of strategic value for the air offensive against the Japanese home islands. The battles for these islands were every bit as deadly as was the struggle for Saipan.

B-29 raids from the hard-won Marianas airfields began in November 1944 and involved high-altitude, daylight attacks against military and military-industrial targets in accordance with earlier directives. The first raid was originally scheduled for November 16, but had to be postponed for several days because of the obscuring clouds and strong winds that were to plague many missions launched from Saipan and other bases in the region. Finally, on November 24, the first attack against Japan from Saipan was undertaken. More than one hundred bombers took off for a raid against a huge aircraft engine factory in Tokyo. A combination of bad weather over Japan and fierce Japanese fighter defenses, however, prevented most planes from hitting the target. The majority, instead, dumped their bombs on the industrial area of Tokyo, relying on radar, rather than visual sighting. Subsequent missions, also aiming mainly high explosive bombs at Japanese aircraft plants, were also hampered by the weather and increasingly desperate Japanese defenses. Not only were the Japanese islands frequently covered by dense clouds, which made precision bombing very difficult, but the jetstream winds at the high altitudes from which the bombs were dropped also compromised accuracy. If the B-29s flew with the wind, their air speed could reach 600 miles per hour, which was too fast for precision bombing. If they flew against the wind, in order to aim more accurately, they become highly vulnerable to anti-aircraft artillery.<sup>37</sup>

Suicide attacks by Japanese fighter pilots were also an increasing risk.<sup>38</sup> These high-altitude precision attacks continued until March 1945, but the results were unsatisfactory. Only one major aircraft factory had been destroyed, and a second one slightly damaged.<sup>39</sup> However, a far more effective alternative to precision bombing with high explosives would soon be developed and implemented: low-altitude bombing of urban areas with incendiary bombs.

### **Growing Interest in Area Incendiary Attacks**

U.S. interest in the potential of area firebomb attacks against Japan predated the growing disappointment with the high explosive precision campaign that began in November 1944 by many years. In the early 1930's, pioneer U.S. airman General Billy Mitchell called attention to the vulnerability of Japan's cities to incendiary attack. "These towns are built largely of wood and paper to resist the devastations of earthquakes and form the greatest aerial targets the world has ever seen...Incendiary projectiles would burn the cities to the ground in short order."<sup>40</sup> American air



*covert (deniable) attacks on collateral damage!*

commanders, while refusing to engage in explicitly identified fire attacks against urban areas in Germany, nonetheless studied the results of the British fire raids, such as the Hamburg attacks in July 1943, "...with an eye to the bombing of Japan."<sup>41</sup>

*now:* Several organizations and committees had contributed to the growing interest in incendiary attacks against Japan. For example, in December 1942, a special panel was formed in the United States, the Committee of Operations Analysts (COA), in order to evaluate target priorities in both the European and Pacific theaters. The COA was composed of "...civilians with extensive experience in dealing with complex business and industrial problems and military men well-grounded in the field of military intelligence."<sup>42</sup> On November 11, 1943, the COA released an important report, based on extensive analysis of the bombing campaigns in Europe, as well as potential targets in Japan, that recommended incendiary attacks against several Japanese cities. According to Ronald Schaffer, "The committee believed that a series of massive firebomb attacks on urban areas would produce a major disaster for Japan. Air raids would burn out great numbers of small subcontracting operations in homes and workshops scattered through the highly flammable cities and would damage some large plants."<sup>43</sup>

About a month prior to the release of the COA report, additional impetus toward firebombing was generated by another pro-incendiary study. On October 15, 1943 a report by the Assistant Chief of Air Staff for Intelligence, titled "Japan, Incendiary Attack Data," also strongly urged incendiary raids against Japanese cities. The report, which came to be widely referred to as "A-2," noted that more than 90 percent of Tokyo was constructed of highly flammable wooden buildings; other cities were similar. A-2 went into great detail in suggesting how to start huge fires in the Japanese cities. Military historian E. Bartlett Kerr notes that "The report provided estimates of the bomb concentration necessary to start sweeping fires in heavily built-up urban areas. The idea was that the combustible materials in Japanese residential construction would serve as 'kindling' for conflagrations that would destroy factories and other military objectives over wide areas."<sup>44</sup> Then, *collateral? or, unintended?* in June 1944, the COA recruited experts from a variety of other agencies and organizations to form the Joint Incendiary Committee, which became known as the Incendiary Subcommittee. According to Schaffer, "The central tasks of the subcommittee were to determine the forces it would take to burn down six major Japanese urban areas, all located on the island of Honshu - Tokyo, Yokohama, Kawasaki, Nagoya, Osaka, and Kobe - and to estimate the probable economic and military consequences of incinerating them."<sup>45</sup>

*Feb 42 - hit civilians, because you can't hit (find) anything else (attraction is no-win, no "bombing", all "hitting" with)*  
*Jan (Lunar March?) - win the war by de-bombing ("Moral" terror)*

The Incendiary Subcommittee reviewed an array of earlier studies, including a series begun in March 1943 by the National Defense Research Council (NDRC) that involved constructing a "village" of Japanese and German homes in Dugway, Utah and then carefully measuring the results of various kinds of incendiary bombs dropped in different patterns. In September 1944, the Incendiary Subcommittee reported to the COA its recommendation that Tokyo and five other Japanese cities be attacked with massive quantities of fire bombs. Such attacks, stated the report, "...will produce very great economic loss, measured in man months of industrial labor-- probably greater loss per ton of bombs despatched than attacks on any other target system."<sup>46</sup>

The subcommittee report also predicted the "dehousing" of nearly 8,000,000 workers. Moreover, noted Sherry, "The report was a rarity in that it explicitly made an estimate of probable enemy casualties, extrapolating its figures from the great Tokyo fire of 1923: some 560,000 Japanese, almost half in Tokyo, would be killed, missing, or seriously wounded."<sup>47</sup>

In order to assess the validity of such projections, advocates of fire bombing argued that their recommended tactics should be tested in actual combat operations. While there had been a few, relatively small, experimental fire raids during the period of daylight precision attacks from the Marianas, the results had been inconclusive. Accordingly, General Haywood Hansell, who commanded the U.S. air forces in the Pacific, was ordered to try an experimental fire raid against Tokyo. Although he was firmly committed to the doctrine of precision bombing, Hansell dutifully undertook such a raid against Tokyo on the evening of November 29-30, 1944. The attack, which involved only 29 bombers, was, according to Kennett, "...small and inconsequential."<sup>48</sup> Hansell was then ordered to organize a more substantial fire raid against Nagoya, Japan. After his protests were rejected, Hansell sent out 100 B-29s bombers in a daylight raid on January 3, but once again the damage was disappointingly meager. As a result of his reluctance to engage in area incendiary bombing, Hansell was removed from his command in early January 1945 and replaced by Curtis LeMay on January 20.<sup>49</sup>

Troubled by none of Hansell's reservations, LeMay believed that massive fire raids on the principal Japanese cities would quickly destroy Japan's ability to carry on the war. LeMay continued the largely unproductive precision attacks for several weeks, during which he also began examining new approaches. On February 3 and 25, he launched experimental incendiary raids against Kobe and Tokyo, respectively, and was encouraged by the level of destruction. By early March 1945, LeMay had decided on a number of radical changes from previous B-29 tactics. First, any pretence of precision bombing was eliminated when he ordered his crews to load their planes to

was  
industrial?  
actual  
efforts?  
(or, loss  
of oil?)

more  
effective?  
on, less  
(hardly)  
costly?  
(but - US  
costs!)

over



the hilt with incendiary bombs, particularly one known as the M-69. The M-69 weighed just over 6 pounds and was stored in clusters in the bomb bays of the B-29s. When dropped from the plane, the cluster would break apart and the individual bombs would scatter as they fell to the ground. The bombs were carefully designed to start fires that would spread rapidly and be difficult to extinguish. As Bartlett E. Kerr noted in his study of the U.S. incendiary attacks against Japan:

As the bomb passed through the roof of a house or factory, a delay fuse actuated, which, after 3 to 5 seconds, detonated an ejection-ignition charge. By this time the bomb would have come to rest, lying on its side or with its nose buried in the floor. At detonation, a TNT charge would explode, and magnesium particles would ignite the gasoline gel contained in a cloth sock. Unlike any other bomb, the explosion blew burning gel out of the tail of the casing and - like a miniature cannon - shot it as far as 100 feet. If the gel struck a combustible surface and was not extinguished it started an intense and persistent fire.<sup>50</sup>

LeMay's second change was that the raids would be carried out at night, which would lessen the risk posed by Japanese defenses. Since the targets would be residential areas, rather than specific factories or military bases, accuracy in bomb aiming was much less important than with previous precision attacks. Third, instead of bombing from the usual 25,000 to 30,000 foot altitude in an orderly formation, the planes would strike individually from a height of only 5,000 to 7000 feet. This would reduce the demand for fuel and allow heavier bomb loads. LeMay also believed that the low-altitude attack would confuse the Japanese air defenses, which had been developed to respond to the previous high-altitude raids.<sup>51</sup> Finally, defensive armaments were stripped from the planes so that more bombs could be carried.<sup>52</sup>

### **The Incineration of Tokyo**

On the night of March 9-10, 1945, LeMay's new ideas were tested in a massive incendiary attack against the city of Tokyo. Although nearly two million people had evacuated Tokyo by the early spring of 1945, as many as six million still remained.<sup>53</sup> Tokyo was one of the most densely populated cities in the world. One section of the city had "...more than 135,000 people per square mile."<sup>54</sup> The vast majority of the buildings were built of wood and therefore highly flammable. In his history of the air war in the Pacific, Wilbur Morrison writes that "Japan's cities were firetraps, despite some reinforced concrete buildings in Tokyo and Yokohama. Poorer sections of Tokyo were the worst, where practically all buildings were one-and two-story wood-frame houses."<sup>55</sup>

The specific area of the city selected as the primary target zone was more than 84 percent residential.<sup>56</sup> A chief rationale for an area incendiary attack against Tokyo was the fact that a substantial portion of its war production was spread out over the city in small "home industries."

Individual workers in their homes produced relatively small quantities of parts for various military equipment that were then collected by factories at which the finished products were assembled. As one official report stated: "These workshops are probably located in quite random fashion through the business, industrial, and residential areas. Destruction of residential areas by fire would probably account for many small-scale manufacturing enterprises."<sup>57</sup> Compared with German cities, Tokyo and other Japanese cities were quite ill-prepared to cope with the fire attacks. The provisions for fire-fighting and sheltering the population were sorely inadequate, and the anti-aircraft capabilities were in no way commensurate with the scale of the attack - particularly when it came at night and at low altitude.<sup>58</sup>

The plan of attack was to launch three streams of B-29 bombers from three air bases in the Marianas. Each bomber stream was led by a special unit of "pathfinders," whose mission was to pinpoint the target area and mark it with 70 pound M-47 incendiary bombs that would quickly start fires to serve as beacons for the rest of the planes that soon followed. The bulk of the bomb load carried by the planes consisted of M-69 incendiaries. Many planes also dropped delayed-action bombs designed to interfere with fire-fighting and rescue efforts.<sup>59</sup> A total of 334 B-29s dropped approximately 2,000 tons of bombs at a target area within "...a rectangle about three miles by four, containing a hundred thousand inhabitants per square mile, or roughly 1.25 million people."<sup>60</sup> *about 10%?*

The goal of the attack was to set the target zone on fire. It was accomplished beyond anyone's expectations. The unprecedented number of planes, the sheer weight of incendiaries dropped in a concentrated area, the ineffectiveness of Tokyo's air defenses and fire-fighting efforts, and weather conditions that rendered the wooden city even more flammable than usual all contributed to create a phenomenon of fire that dwarfed even the firestorms that consumed Hamburg and Dresden - a so-called sweep conflagration. As Sherry described it: "Unlike the firestorm that sucks everything to its center, the conflagration that swept Tokyo was rapaciously expansive, a pillar of fire that was pushed over by the surface winds to touch the ground and gain new fury from the oxygen and combustibles it seized."<sup>61</sup>

The temperature generated by the sweep conflagration exceeded 1,800 degrees Fahrenheit - hot enough to boil water in the canals that criss-crossed parts of the city.<sup>62</sup> The heat radiated from the ground endangered the bombers nearly a mile above the burning city. Caidin wrote that, "The thermals that soared upward from Tokyo were too much to believe. Sixty-ton bombers were flung about like matchsticks; B-29s at five thousand feet were thrust upward in a few seconds to eight or nine thousand feet."<sup>63</sup>



the light of burning cities.

In their planes overhead, it was possible for crewmembers to read charts by the light of the fires below.<sup>64</sup> Because of the low altitude and the number of burning bodies, some airmen were nauseated by "...the overpowering, sweet-sick stench of the burning flesh that permeated the skies two miles over the tortured city."<sup>65</sup> On the ground, many people who sought refuge in the canals drowned; many others were boiled to death.<sup>66</sup> As was the case in German cities subjected to incendiary attack, bomb shelters became deathtraps for many thousands of people:

The shelters into which thousands of people have jammed are made of wood...The tongues of flame, the balls of fire, the great crimson sheets, exploded down the alleys and the streets, engulfing all before them. Whole families are in an instant set aflame, roasting alive in unheard paroxysms of screaming and pain as the terrible heat exploded the wooden doors and supports of the shelters into flame. It is inevitable. The shelters are of wood. The wood is dry, surrounded by heat and fire.<sup>67</sup>

The U.S. Strategic Bombing Survey estimated the death toll from the six-hour raid to have been 87,793, with 40,918 injuries.<sup>68</sup> Other estimates put the number of deaths at more than 100,000.<sup>69</sup> Sherry points out that, "...with many schoolchildren already evacuated and younger males in military service, women and old people suffered grossly disproportionate losses."<sup>70</sup> The removal of the dead took 25 days.<sup>71</sup> U.S. losses were confined to two planes shot down and 42 damaged by anti-aircraft fire (none were destroyed by Japanese fighters).<sup>72</sup> U.S. General Thomas Power, who watched it unfold from his observation plane, called the Tokyo raid, "...the greatest single disaster incurred by any enemy in military history." He went on to state that, "There were more casualties than in any other military action in the history of the world."<sup>73</sup> One of General MacArthur's aides, Brigadier-General Bonner Fellers, in a confidential memo described the raid as "'one of the most ruthless and barbaric killings of non-combatants in all history.'"<sup>74</sup>

Within days of the Tokyo raid, similar fire attacks were conducted against other Japanese cities. LeMay knew that many of his planes were likely to be diverted to help support the invasion of Japanese-held Okinawa near the end of March, and he wanted to demonstrate the value of massive fire attacks in as convincing a manner as possible.<sup>75</sup> As Kennett observed, "...cityburning was becoming something of a science, as LeMay's men tried various weapons and techniques."<sup>76</sup> During the late spring and summer of 1945, LeMay's bombers continued the onslaught against Japan. Between May and August 58 cities were destroyed by firebombing.<sup>77</sup>

By mid-June 1945, the bombers were running out of targets. Virtually every sizeable city had been destroyed by firebombs, with the exception of Kyoto, which had been personally exempted from the target list by Secretary of War Henry Stimson due to its historical and religious significance, and several other cities, including Hiroshima and Nagasaki, which were being left "virgin" as potential targets for the new atomic bombs that were then being developed in the United

States.<sup>78</sup> As the incendiary bombing campaign continued, increasingly smaller cities were added to the target list. By July, 1945, cities with populations of 100,000-200,000 were attacked. The city of Toyama, for example, suffered 99.5 percent destruction. In August, cities with fewer than 50,000 people were struck.<sup>79</sup>

### Atomic Attacks Against Hiroshima and Nagasaki

By early August 1945, following the successful test of an atomic bomb in the New Mexican desert on July 16, two atomic bombs were ready for use against Japan. On August 6, the first atomic bomb was dropped on the city of Hiroshima. Three days after Hiroshima was destroyed, the second atomic bomb was dropped on Nagasaki. The resulting carnage was every bit as ghastly as that caused by the earlier incendiary attacks. As one survivor, who had been a six-year-old boy at the time, recalled:

Near the bridge there were a whole lot of dead people. There were some who were burned black and died, and there were others with huge burns who died with their skins bursting, and some others who died all stuck full of broken glass. There were all kinds. Sometimes there were the ones who came to us asking for a drink of water. They were bleeding from their faces and from their mouths and they had glass sticking in their bodies. And the bridge itself was burning furiously.... The details and the scenes were just like hell.<sup>80</sup>

Whereas the earlier incendiary raids took hours to incinerate a city, much of Hiroshima and Nagasaki were obliterated instantaneously. One moment, the city was there; the next, it had been reduced to flattened, burning desolation, populated by the dead, dying, and injured. Another crucial difference between the atomic bombs and their precursors lay in the delayed effects of radiation. According to Lifton:

Survivors began to notice in themselves and others a strange form of illness. It consisted of nausea, vomiting, and loss of appetite; diarrhea with large amounts of blood in the stools; fever and weakness; purple spots on various parts of the body from bleeding into the skin...inflammation and ulceration of the mouth, throat and gums...bleeding from the mouth, gums, throat, rectum, and urinary tract...loss of hair from the scalp and other parts of the body...extremely low white blood cell counts when those were taken...and in many cases a progressive course until death.<sup>81</sup>

As many as 140,000 people were promptly killed by the Hiroshima bomb and 70,000 by the Nagasaki bomb, and additional thousands died in the months and years following the war due to the delayed effects of radiation exposure.<sup>82</sup> While these new weapons may have been regarded as epochal and revolutionary by the scientists who created them, to many of the airmen who had been systematically burning the cities of Japan, they represented simply a more effective incendiary capable of hastening the end of the war and thereby precluding the need for a very costly land invasion of the Japanese home islands. But although the official rationale was to shock the Japanese leadership into accepting the terms for unconditional surrender demanded of them by the United

*Significant / 1st look?*



States and thereby end the war and save hundreds of thousands of lives, both American and Japanese, recent scholarship has called that rationale into question.<sup>83</sup>

In 2002, the scholar and U.S. Army officer Brian Steed concisely described the continuity between conventional and nuclear strategic bombing in World War II, when he in a paragraph about nuclear weapons wrote that

Essentially these are the world's most powerful weapons of terror. The target is the will of the people. The only example is the American use of these devices against Japan. They were analogous to the firebombing of Tokyo and Dresden. The political effect was greater because the blow was delivered with a single device that was awesome to those not directly affected.<sup>84</sup>

def.

AWE

## Nuremberg and Beyond

A number of persons – scholars, soldiers, politicians, among others – have viewed strategic bombing in general, and the allied conventional and nuclear strategic bombing during World War II in particular, as anything from controversial, over plain criminal, to genocide or genocidal.<sup>85</sup> This was the case when Roosevelt at the outbreak of war, before the erosion of restraint, urged that "...armed forces shall [...] under no circumstances undertake the bombardment from the air of civilian populations...". This was also the case in the immediate aftermath of the war. Why, it might be asked, was not strategic bombing included among the offenses for which German leaders were charged at Nuremberg? After all, the Germans killed thousands of civilians with their bombardment of Coventry, Rotterdam, and London, and with their indiscriminate attacks with V-1 buzz bombs and V-2 ballistic missiles. Nor was strategic bombing cited at the International Military Tribunal - Far East, in which Japanese military and political leaders were charged with war crimes and crimes against humanity - despite the fact that the Japanese employed aerial bombardment against crowded cities in their aggressions against China.

But,

FDR later

The reason for such apparent illogic is given quite bluntly by Telford Taylor, who served as an American prosecutor at the first trial in Nuremberg and then as chief prosecutor at the twelve subsequent war crimes trials. In a book on the relevance of the Nuremberg principles to the U.S. war in Vietnam, Taylor wrote that "Aerial bombardment had been used so extensively and ruthlessly on the Allies as well as the Axis side that neither at Nuremberg nor at Tokyo was the issue made a part of the trials."<sup>86</sup> More recently, in his memoirs of the trials, Taylor wrote that the German bombing "paled by comparison" to that conducted by Great Britain and the United States against Germany and Japan.<sup>87</sup> In other words, the victorious Allies chose not to focus on the criminal nature of aerial bombardment of civilians, because to have done so would have probably

see Alquis  
"give so..."

cf. Lockman  
(But if prosecution reached "low" or  
bombing, we didn't bomb's prosecution all over China?)

aided the attorneys for the German and Japanese defendants, to say nothing of directing attention to the fact that they, themselves, had wrought vastly greater aerial carnage than their fascist enemies. As noted, some authorities have acknowledged the atrocious and/or criminal nature of strategic bombing, particularly in the form of the atomic bombs. For example, President Truman's wartime chief of staff, Admiral William Leahy, wrote in his postwar memoirs: "In being the first to use it [the atomic bomb], we had adopted an ethical standard common to the barbarians of the Dark Ages."<sup>88</sup>

W. Leahy:  
Somewhere  
Hughes  
1946

In 1949, when only the Air Force possessed an atomic capability, Navy leaders argued that such weapons were immoral. One Rear Admiral testified before Congress that the Air Force's atomic-bomb based strategy was, "...ruthless and barbaric...random mass slaughter of men, women, and children...morally wrong...contrary to our fundamental ideas."<sup>89</sup> Similarly, in the postwar Tokyo War Crimes Trial, in which the United States and ten other nations found Japanese political and military leaders guilty of war crimes and crimes against humanity, one of the justices, in a dissenting opinion, called the dropping of the atomic bombs "the only near approach to the directives...of the Nazi leaders during the second world war."<sup>90</sup> Michael Walzer, in his widely-cited book on ethics and warfare, asserted that had the Japanese destroyed an American city with an atomic bomb, "the action would clearly have been a crime, one more for Truman's list" in the war crimes trials.<sup>91</sup>

There are several reasons for labelling this type of warfare as criminal, for example that by its very nature, mass bombing, particularly by incendiary and atomic bombs, is indiscriminate. As R. J. Rummel has written: "Deliberately targeting civilians with explosive and incendiary bombs simply because they happen to be under the command and control of an enemy Power is no better than lining them up and machine gunning them, a clear atrocity."<sup>92</sup> Clearly, the vast majority of the civilian victims of strategic bombing were personally defenseless.<sup>93</sup> While it is true that efforts were made by their governments to provide protection in the form of active defenses and bomb shelters, the high death tolls attest to the inadequacy of those defenses. Indeed, the Allies deliberately tried to degrade rescue and recovery efforts in a variety of ways, including the use of delayed action bombings. Moreover, in certain bombing attacks, like the combined British and American attack against Dresden and the American atomic bombings of Japan, enemy defenses were very inadequate. The individual civilian cowering in a shelter was completely powerless. Most civilian victims, furthermore, were killed regardless of whether they surrendered or resisted. While their national leaders did have the capacity to surrender and thereby end the



bombing, the individual citizens of the totalitarian states had virtually no influence over their leaders. Nor could they, as individuals, surrender to or resist their killers, who attacked from the high in the air. *no quarter, no prisoners (God)*

Euphemistic expressions like "dehousing" notwithstanding, the fire raids were carefully planned to take advantage of weather conditions, highly flammable buildings, and calculated disruption of rescue efforts to wreak maximal damage by deliberately creating firestorms in densely populated residential and industrial areas of cities. After each raid, the results were carefully photographed and the areas of that had been incinerated marked on maps to help plan future raids to fill in the gaps. *no escape*

In his valuable critique of the British bombing of German cities, Stephen Garrett notes that apologists for the area offensive often defend it by citing the "principle of double effect," which states, in essence, that under certain circumstances it is morally acceptable to violate the war convention and deliberately attack non-combatants. One of the criteria for the principle of double effect to apply is that the destruction of civilians must be a reluctantly tolerated side-effect, rather than a deliberate goal, or a means to an end. Garrett concludes that "...the principle of double effect hardly can be offered as a defense of the area offensive simply because the evil side-effect in this case (the random killing of non-combatants) was not an unintended or regrettable consequence of a legitimate military action but was instead one of the main points of the strategy."<sup>94</sup> The same could be said for the U.S. area offensive against Japan. *wa*

Still, the debate continues; as recently as 2002, the military historian Caleb Carr wrote about the nuclear bombing of Japan: "While it could be argued that American bombers had already struck at all major Japanese military installations, leaving only minor ones such as those in Hiroshima and Nagasaki, it could also be argued that the choice of the two cities was evidence of the self-perpetuating vengeful nature of terror." And he adds "[such] an argument gains credibility when one considers the extensive American firebombing of Japanese cities that characterized the final months of the war."<sup>95</sup> Aside from the immediate and long term physical effects - in the form of mass killing and destruction - strategic bombing, especially the nuclear bombing of Hiroshima and Nagasaki, had long term political and military effects. As Gregg Herken has pointed out, even though both the British and American postwar assessments of the strategic bombing campaigns questioned the efficacy of striking population centers, as opposed to specific industrial targets, "The postwar debate that should have arisen over the effects of strategic bombing was preempted by the atomic raids on Hiroshima and Nagasaki."<sup>96</sup> *? ?*

To protect this was to criminalize  
US S.B. and Hiroshima.  
To protect Nag. is to

These plans entailed the willingness to inflict death and destruction on a scale that dwarfed Dresden, Tokyo, and Hiroshima and Nagasaki. And as the size of the American nuclear arsenal increased, so did the scale of megadeath that our planners were willing to cause.

... rules of  
terror -  
minimizing -  
allowing...  
(no shock  
& awe)

### Continuities Between Strategic Bombing and Nuclear Weapons Policy in the Cold War

The advent of the cold war and of the nuclear bomb did not cause any significant shift in policy regarding strategic bombing. Instead, we believe there are at least two important continuities.

The first continuity between wartime strategic bombing and postwar nuclear weapons policy was suggested by John Dower in his discussion of the racist imagery that permeated American attitudes toward the Japanese.<sup>97</sup> As World War II drew to a close, and as the military alliance between the United States and the Soviet Union began to be distracted by American concerns about the dangers posed by Soviet (and Chinese) communism in Europe and Asia after the war, some of the dehumanizing, racist hatred that had been directed against the Japanese began to be transferred to the Soviets, who, according to one writer at the time, were also "Asiatic."<sup>98</sup> As that same writer, H. C. McGinnis, writing in Catholic World, warned,

With Russia's expert mechanized forces spearheading an invasion of Europe and, according to current Red tactics, with stupendous concentrations of Red artillery blasting holes in white defenses through which literally scores of millions of hate-infuriated colored warriors will pour to wreak vengeance for the thousands of injustices heaped upon their people, Europe would probably become a veritable shambles.<sup>99</sup>

guilt / frustration  
(alone revolt)

In other words, Dower suggested that Americans, who had grown accustomed to identifying the Japanese in racial terms (in contrast to the attitude toward Germans), were susceptible to extending the same kind of thinking to Russians. Dower's suggestion is supported indirectly by the work of fellow historian Paul Boyer. In his valuable study of American thought and culture in the early postwar years, Boyer emphasized that his review of the popular literature of the time revealed that fears engendered by the atomic bombs helped to create, "A time of cultural crisis," involving "...a new and threatening reality of almost unfathomable proportions," for which "...the dominant... response was confusion and disorientation."<sup>100</sup> The extent to which racist anti-Russian and Chinese thinking after the war was reinforced by the precedent of racist anti-Japanese thinking during the war, and the possibility that such dehumanizing attitudes may have facilitated American embrace of nuclear weapons to contain the communist threat, are, in our opinion, still speculative, but certainly worthy of further study.

It's not

How about: study (evaluation) of species  
capabilities, characteristics,  
propensities...



A second and considerably less speculative continuity between strategic bombing and nuclear war plans stems from the fact that key individuals and groups who played important roles in policy making and implementation of strategic bombing also played important roles in the early preparations for nuclear war. A group that played important roles in both strategic bombing and the formulation of early nuclear war plans were economists, mathematicians, and other academics who had served during the war as operational analysts, using quantitative skills to promote the Allied war effort, and then after the war as analysts and consultants called upon by the U.S. government to help integrate nuclear weapons into our defense plans as "rationally" as possible. Many served as employees of the RAND corporation, a think-tank formed shortly after the war to conduct research for the U.S. Air Force.

According to Fred Kaplan, who has closely studied the evolution of nuclear strategy, during World War II, operational analysts "carefully examined data on the most recent military operations to determine the facts, elaborated theories to explain the facts, then used the theories to make predictions about operations of the future."<sup>101</sup> By doing so, they made many important contributions to the Allied victory in the war, including recommending bomb loads and targets, identifying the most effective formations for attacking bombers, and increasing the efficiency of efforts to seek and destroy German submarines.<sup>102</sup> According to Gregg Herken, another historian of nuclear strategy, operational research was also used during World War II to help "...bring about the terrible firestorms that consumed cities in Germany and Japan."<sup>103</sup>

A second group is the Strategic Air Command (SAC), the branch of the U.S. Air Force that, in the first years after World War II, was the only military unit equipped with nuclear weapons. In the years following the war, SAC strove to retain its "ownership" of the bomb and, along with that ownership, its claim to the lion's share of the available defense spending. As Kaplan noted:

In 1946, the Strategic Air Command was created as guardian over the new weapon, and shortly thereafter the Air Force was made an independent service. In the early years of postwar demobilization, the Air Force was the only service of the armed forces to get practically as much money from the President and Congress as it wanted.<sup>104</sup>

*Fred Kaplan*  
*Herken*  
*(Friesen, Connors)*

Some of the key air force leaders who had been responsible for planning the strategic bombing campaigns during the war, like Curtis LeMay and others, continued their service to the nation after the war by serving in, and in LeMay's case, commanding, SAC. In essence, the U.S. plans to wage nuclear war between 1945 and 1961 were significantly influenced by men who had been responsible for formulating and implementing the policy of obliteration bombing of German and Japanese cities during World War II. SAC leaders felt that the atomic bombs could be used in essentially the same

ways that high explosive and fire bombs were used during the war. While there were some differences among them regarding specific targeting priorities, most favored nuclear attack against enemy cities, just as had been done with incendiary and atomic bombs during World War II.<sup>105</sup>

Not surprisingly, other offices in the nuclear-armed Air Force, staffed, like SAC, by many veterans from the strategic bombing campaigns, also promoted a continuation of World War II targeting policies with postwar nuclear weapons. Writing of nuclear strategy in the late 1940s and early 1950s, Kaplan noted: "The Air Target Division, of which Target Programs was a part, was filled with military targeteers busily applying to the atomic age the principles that they had pursued in the strategic bombing campaigns of World War II. It was these officers who came up with such atomic targeting concepts as 'the Sunday punch' and 'killing a nation.'<sup>106</sup>

By the early 1950s, SAC had, according to David Alan Rosenberg, one of the leading scholars of U.S. operational nuclear war planning, effectively "seized" control of such planning.<sup>107</sup> An indication of just how powerful SAC actually was has been provided by William Arkin and Peter Pringle in their book, SIOP: The Secret U.S. Plan for Nuclear War. SAC's power was embodied in General Curtis LeMay, who became its second commander in 1948. "SAC was," wrote Arkin and Pringle,

supposed to submit the [atomic war] plans directly to the JCS [Joint Chiefs of Staff] for review and approval, although LeMay became so independent that from 1951 until 1955 the JCS never received a copy of the plans: LeMay considered the details of operational planning a closely guarded secret and simply refused to let anyone know what they were. He could have been ordered to produce them, of course, and eventually he was, but for six crucial years America's nuclear war planning was unregulated.<sup>108</sup>

Not only did SAC plan to carry out atomic attacks against enemy cities in retaliation for unspecified aggressive acts, but it also seriously entertained the notion of using its atomic arsenal against the Soviet Union even before any overt aggression had occurred. According to Herken, "The topic of preventive war - meaning an unprovoked attack by the United States on the Soviet Union - had been discreetly discussed in some government and military circles since the advent of the atomic bomb."<sup>109</sup> LeMay's successor as commander of the Strategic Air Command, Thomas Power, wrote in his memoirs of that era that he thought it "...evident that we may have to take military actions of various types which, with certain qualifications, might fall under the public's broad concept of 'preventive war.'"<sup>110</sup> Notwithstanding these and other suggestions favorable to the idea, Eisenhower formally rejected the notion of preventive war the fall of 1954. 1953? There was, however, as Herken has pointed out, a "nether region" between preventive war and preemptive attack.<sup>111</sup> Whereas preventive war referred to the use of U.S. atomic weapons against the Soviet Union in the absence of any provocation, simply as a means of preventing the enemy



from ever acquiring the capacity for serious aggression with its own atomic weapons, preemption involved attacking the Soviet Union when it was thought to be in the process of preparing to attack the United States and before it could carry out such an attack. *or after it acquired - even using*

Thus, the "nether region" between prevention and preemption left a good deal of room for American first use of nuclear weapons against the Soviet Union. Under the direction of leaders such as Curtis LeMay, SAC strove to exploit that room as far as possible. According to Herken, at a secret briefing in 1954, LeMay asserted that "the idea of striking second was 'not in keeping with United States history.' 'I want to make it clear that I am not advocating a preventive war,' LeMay explained at the briefing. But, he said, 'I believe that if the U.S. is pushed in the corner far enough we would not hesitate to strike first.'" <sup>112</sup> On another occasion, LeMay told Robert Sprague, who had been sent by Eisenhower to visit SAC Headquarters in order to find out just how the secretive LeMay intended to use "his" nuclear weapons: "If I see that the Russians are amassing their planes for an attack, I'm going to knock the shit out of them before they take off the ground.'" <sup>113</sup>

While the continuities from conventional to nuclear strategic bombing in postwar America are evident, the envisaged destruction of enemy, i.e. Soviet, territory and population was unparalleled. According to Rosenberg, the first nuclear war plan, codenamed BROILER, in 1947, called for dropping 34 atomic bombs on 24 cities. <sup>114</sup> By December 1948, "Operation TROJAN" called for dropping 113 atomic bombs on 70 Soviet cities. Such an attack would have caused tens of millions of immediate deaths and many more delayed fatalities.

U.S. war plans in the early 1950's were designed to leave the Soviet Union "...nothing but a smoking, radiating ruin at the end of two hours." <sup>115</sup> Thus, the official war plan for 1955 would have obliterated 118 of the 134 major Soviet cities. According to official estimates, these attacks would have caused approximately 77,000,000 prompt casualties, of which 60,000,000 would have been deaths. Cities in China were also targeted, as were capital cities in nations allied with the Soviet Union and China. <sup>116</sup> By 1961, the U.S. war plan - by then known as the Single Integrated Operation Plan, or SIOP - was officially expected to cause mass death on a scale beyond comprehension. According to Thomas Powers:

The [U.S.] Joint Chiefs of Staff officially estimated that the first SIOP would kill somewhere between 360 million and 425 million people under Communist control. The SIOP provided for no middle ground, no breathing space, no time to reconsider. When ordinary diplomacy came to an end, we were going to do our damndest to exterminate a fifth of the globe. <sup>117</sup>

(+) fallout

600M 1/4 ?  
1/5 ?

will  
As?

with

Eso

Attack

(Preventive)

✓ The unusually candid reflections of the career of nuclear target planner during the Cold War period, Henry Nash, are also instructive. "What was it about work with Air Targets that made me insensitive to its homicidal implications?," he asks. He continues, "Our office behavior was no different from that of men and women who might work for a bank or insurance company. What enabled us to calmly plan to incinerate vast numbers of unknown human beings without any sense of moral revulsion?"<sup>(118)</sup>

As the vastly more powerful hydrogen bombs began to be developed and integrated into the United States and Soviet arsenals, nuclear war plans entailed even greater levels of death and destruction. -1961 The destructive power of the hydrogen bomb was as revolutionary in comparison with the atomic bomb as was the latter to conventional weaponry. Even Robert Oppenheimer who had served as director of the war-time Manhattan Project to develop the first atomic bombs, resisted efforts to develop the hydrogen bomb. A key advisory committee which he chaired emphasized that the new weapon would be "...in a totally different category from an atomic bomb," with "...no inherent limit in the destructive power that may be attained." Its report even asserted that such a bomb "...might become a weapon of genocide."<sup>119</sup>

### The Cuban Missile Crisis

Although both superpowers justified their accumulating stockpiles of hydrogen bombs as being necessary to deter each from attacking the other, the danger of their actual use was never absent. Thus, in 1962, when the United States discovered that the Soviet Union had managed to sneak a number of intermediate range nuclear-armed missiles into Cuba, the so-called "Cuban Missile Crisis" brought the world to brink of actual nuclear war, a war that could have caused hundreds of millions of deaths. <sup>non-US</sup> During the thirteen days of the crisis, President Kennedy and his advisors considered a range of options to compel the Soviets to remove the missiles. The options ranged from behind-the-scenes diplomatic negotiations, to a naval blockade around Cuba, to an air strike against the missiles based followed by an invasion of the island. The pressure on Kennedy and his advisors was intense. As one of them later wrote: "Each one of us was being asked to make a recommendation which would affect the future of all mankind, a recommendation which, if wrong and if accepted, could mean the destruction of the human race."<sup>120</sup> Even though the vote among Kennedy's top advisors was nine to seven for the air strike and invasion, Kennedy chose the blockade instead. Much to everyone's relief, shortly after the blockade had commenced, the Soviets agreed to remove the missiles, bringing the crisis to a close.

Would  
have  
affected  
US plans?  
C-III in  
1962?



No

5

Omniwell

## The Constant Nuclear Threat

\* Are we blowing home to Heaven? (Thorg.)  
 the souls of The souls of Tinnits. Elites of Moscow

+ D-2 (not, "nuclear war" or, as in WWII, "war-ending" (or "war-winning"; though, "prevailing")

deterrence provides the hooker." that enables humane, decent people to "produce...the most hideous and destructive kinds of weapons."<sup>127</sup> This is still the case. In 1999, Robert McNamara wrote

Today, nine years after the end of the Cold War, there are approximately 40,000 nuclear warheads in the world with a destructive power more than one million times greater than the bomb that flattened Hiroshima. We in the USA – and all other inhabitants of our globe – continue to live with the risk of nuclear destruction. The United States' war plans provide for contingent use of nuclear weapons just as they did when I was Secretary of Defense in the 1960s."<sup>128</sup>

<sup>1</sup> In view of the unprecedented destructiveness of nuclear weapons, some scholars have questioned the appropriateness of the term "war" when used in connection with the word "nuclear". As an alternative, philosopher John Sommerville has proposed the term "nuclear omnicide" (which he has derived from the Latin word *omni*, meaning "all", and the Greek word *cide*, meaning "to kill") to convey the probability that a war fought with nuclear weapons would constitute a categorically new dimension of mass killing. See Sommerville, 1985, "Nuclear 'War' is Omnicide", in Michael Allen Fox and Leo Groarke, (eds.), *Nuclear War: Philosophical Perspectives*, New York, Peter Lang, p.4.

<sup>2</sup> Quoted in Richard Rhodes, *The Making of the Atomic Bomb*, New York, Simon & Schuster, 1986, p. 310.

<sup>3</sup> Quoted in Martin Middlebrook, *The Battle of Hamburg: Allied Bomber Forces Against a German City in 1943*, New York, Charles Scribner's Sons, 1981, pp. 19-20.

<sup>4</sup> Overy, *The Air War, 1939-1945*, p. 63.

<sup>5</sup> Quoted in Sherry, *The Rise of American Air Power*, p. 99.

<sup>6</sup> Quoted in Wesley F. Craven and James Lea Cate, *The Army Air Forces in World War II*, Vol. I, Chicago and London, University of Chicago Press, 1948, p. 149.

<sup>7</sup> Craven and Cate, *The Army Air Forces in World War II*, Vol. I, p. 597.

<sup>8</sup> Many scholars, of course, would take issue with Sherry's depiction of Marshall, who was not only a wartime general but a postwar Secretary of State who received the Nobel Peace Prize for his plan to rebuild Europe. His European Recovery Program, later dubbed the Marshall Plan, provided U.S. funds for the rebuilding of nations--both former allies and enemies--that lay in ruins as the result of the war. One scholar, Charles L. Mee, Jr., has called the Marshall Plan the "...most successful piece of foreign policy conceived by any nation in the twentieth century."

<sup>9</sup> George Quester, *Deterrence Before Hiroshima: The Air Power Background of Modern Strategy*, New York, John Wiley and Sons, 1966, p. 145; see also Overy, *The Air War, 1939-1945*, pp. 73-75.

<sup>10</sup> Sherry, *The Rise of American Air Power*, 1987, p. 156.

<sup>11</sup> Quoted in Sherry, *The Rise of American Air Power: The Creation of Armageddon*, New York and London, Yale University Press, 1987, p. 154.

<sup>12</sup> Middlebrook, *The Battle of Hamburg*, p. 328.

<sup>13</sup> Quoted in Musgrove, *Operation Gomorrah: The Hamburg Firestorm Raids*, New York and London, Jane's Publishing Company, 1981, p. 109.

<sup>14</sup> Quoted in Middlebrook, *The Battle of Hamburg*, p. 244.

<sup>15</sup> Martin Caidin, *A Torch to the Enemy*, New York, Ballantine Books, 1979 [1960], p. 93.

<sup>16</sup> Musgrove, *Operation Gomorrah*, p. 98.

<sup>17</sup> Caidin, *A Torch to the Enemy*, p. 98.

<sup>18</sup> Quoted in Musgrove, *Operation Gomorrah*, p. 109.

<sup>19</sup> Kennett, *A History of Strategic Bombing*, pp. 146-148.

<sup>20</sup> Middlebrook, *The Battle of Hamburg*, p. 328.



<sup>21</sup> Earl R. Beck, *Under the Bombs: The German Home Front, 1942-1945*, Lexington, KY, The University Press of Kentucky, 1986, p. 76

<sup>22</sup> Kennett, *A History of Strategic Bombing*, p. 153.

<sup>23</sup> Schaffer, *Wings of Judgment*, p. 67.

<sup>24</sup> Craven and Cate, *The Army Air Forces in World War II*, Vol. III, 1951, p. 723.

<sup>25</sup> Sherry, *The Rise of American Air Power*, p. 162. According to Robin Neillands, an outspoken apologist for the allied bomber offensive and the resulting civilian casualties, "[the] USAAF had been bombing cities and striking residential areas for years, ever since it had started bombing operations in Europe, and everyone in the USAAF knew it. [...] If the USAAF aircrew and commanders found comfort in declaring that, no matter where the bombs fell, they were always aimed at marshalling yards and other military targets, that is one thing; to go further and imply that this intention somehow made American bombing more ethical than the British version is simply nonsense. But, however nonsensical, this line played very well at home. Many decent Americans, living at a comfortable distance from the daily realities of war, were therefore shocked to discover that their boys, instead of harassing the armed and dangerous enemy, were bombing civilians – just like the British... and the Germans." [italics in original] *The Bomber War*, 2001, p.369.

US  
German  
us...

<sup>26</sup> Crane, *Bombs, Cities, and Civilians*, p. 76.

<sup>27</sup> Schaffer, *Wings of Judgment*, p. 56.

<sup>28</sup> Schaffer, *Wings of Judgment*, p. 56; for a different opinion, see Crane, *Bombs, Cities, and Civilians*, p. 98.

<sup>29</sup> Quoted in Schaffer, *Wings of Judgment*, p. 73.

<sup>30</sup> Schaffer, *Wings of Judgment*, 1986, p. 97.

<sup>31</sup> Quester, *Deterrence Before Hiroshima*, p. 162.

<sup>32</sup> Sherry, *The Rise of American Air Power*, p. 123.

<sup>33</sup> Carr, 2002, *The Lessons of terror*, p.180.

<sup>34</sup> Kennett, *A History of Strategic Bombing*, p. 163.

<sup>35</sup> Caidin, *A Torch to the Enemy*, p. 44.

<sup>36</sup> Dower, *War Without Mercy*, p. 45.

<sup>37</sup> Schaffer, *Wings of Judgment*, p. 124.

<sup>38</sup> Caidin, *A Torch to the Enemy*, p. 62.

<sup>39</sup> Hoito Edion, *The Night Tokyo Burned*, New York, St.Martin's Press, 1987, p. 34.

<sup>40</sup> Quoted in Sherry, *The Rise of American Air Power*, p. 58. According to Jenkins, 2002, American officers and politicians, in the period from Mitchell's proposal to the attack on Pearl Harbour, formulated several plans to systematically fire-bomb Japanese cities: "In late 1940 the US advisor to the Chinese air force, retired Air Corps General Claire Chennault, proposed a plan for basing hundreds of US bombers in China. From there these forces would be able to 'burn out the industrial heart of the Empire with fire-bomb attacks on the teeming bamboo ant heaps of Japanese cities.' Franklin Roosevelt was 'simply delighted' by Chennault's scheme. When it proved unworkable he turned to other ways of using bombers against Japan?" p.4.

<sup>41</sup> Sherry, *The Rise of American Air Power*, p. 156.

<sup>42</sup> Bartlett E. Kerr, *Flames Over Tokyo: the U.S. Army AirForce's Incendiary Campaign Against Japan*, New York, D.I.Fine, 1991, p. 22.

<sup>43</sup> Schaffer, *Wings of Judgment*, pp. 111-112. See also Hillis Lory, 1943, *Japan's Military Masters: A Ruthless Fanaticism Governs the Japanese Empire* (Fighting Forces Series, *The Infantry Journal*), p.181: "Japanese homes are sections of a huge assembly line that extends nearly the length and breadth of Japan. If we are to destroy effectively Japan's war industries we must destroy thousands of these tiny factory homes."

<sup>44</sup> Kerr, *Flames Over Tokyo*, p. 42.

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- <sup>45</sup> Schaffer, *Wings of Judgment*, p. 113.
- <sup>46</sup> Quoted in Sherry, *The Rise of American Air Power*, p.229.
- <sup>47</sup> Sherry, *The Rise of American Air Power*, p. 229.
- <sup>48</sup> Kennett, *A History of Strategic Bombing*, p. 169.
- <sup>49</sup> Kennett, *A History of Strategic Bombing*, p. 169.
- <sup>50</sup> Kerr, *Flames Over Tokyo*, p. 14.
- <sup>51</sup> Schaffer, *Wings of Judgment*, p. 126.
- <sup>52</sup> Kennett, *A History of Strategic Bombing*, p. 170.
- <sup>53</sup> Sherry, *The Rise of American Air Power*, p. 274.
- <sup>54</sup> Crane, *Bombs, Cities, and Civilians*, p. 132.
- <sup>55</sup> Wilbur H. Morrison, *Point of No Return: The Story of the Twentieth Air Force*, New York, Times Books, 1979, p. 197.
- <sup>56</sup> Rhodes, *The Making of the Atomic Bomb*, p. 596.
- <sup>57</sup> Quoted in Kerr, *Flames Over Tokyo*, p. 72.
- <sup>58</sup> Caidin, *A Torch to the Enemy*, p. 86; p. 99.
- <sup>59</sup> Edion, *The Night Tokyo Burned*, p. 206.
- <sup>60</sup> Kennett, *A History of Strategic Bombing*, p. 171.
- <sup>61</sup> Sherry, *The Rise of American Air Power*, p. 276.
- <sup>62</sup> Sherry, *The Rise of American Air Power*, p. 276.
- <sup>63</sup> Caidin, *A Torch to the Enemy*, p. 119.
- <sup>64</sup> Steve Birdsall, *Point of No Return: The Story of the Twentieth Air Force*, New York, Times Books, 1980, p. 194.
- <sup>65</sup> Caidin, *A Torch to the Enemy*, p. 121.
- <sup>66</sup> Schaffer, *Wings of Judgment*, p. 134.
- <sup>67</sup> Caidin, *A Torch to the Enemy*, pp. 131-32.
- <sup>68</sup> Schaffer, *Wings of Judgment*, p. 132.
- <sup>69</sup> Rhodes, *The Making of the Atomic Bomb*, p. 599.
- <sup>70</sup> Sherry, *The Rise of American Air Power*, p. 277.
- <sup>71</sup> Dower, *War Without Mercy*, p. 41.
- <sup>72</sup> Schaffer, *Wings of Judgment*, p. 132.
- <sup>73</sup> Quoted in Schaffer, *Wings of Judgment*, p. 132.



<sup>74</sup> Quoted in Lewis and Steele, 2001, *Hell in the Pacific*, p.200. The Canadian Lieutenant-General E. L. M. Burns in 1966, in the book *Megamurder* about the nuclear arms race, wrote that the "...actual destruction and loss of life at Hiroshima and Nagasaki was less than in the attacks on Tokyo and Dresden, and to this must be added all the death and suffering inflicted on civilians during the air war on Germany, and during the last half year on the Japanese." p.62.

<sup>75</sup> Kerr, *Flames Over Tokyo*, pp. 214-217.

<sup>76</sup> Kennett, *A History of Strategic Bombing*, p. 171.

<sup>77</sup> Overy, *The Air War*, p. 100.

<sup>78</sup> Otis Cary, "The Sparing of Kyoto, Mr. Stimson's 'Pet City,'" *Japan Quarterly*, Vol. 22, 1975, pp. 337-347.

<sup>79</sup> Kennett, *A History of Strategic Bombing*, p. 175.

<sup>80</sup> Quoted in Rhodes, *The Making of the Atomic Bomb*, pp. 724-725.

<sup>81</sup> Robert Jay Lifton, *Death in Life: Survivors of Hiroshima*, New York, Random House, 1967, p. 57.

<sup>82</sup> Rhodes, *The Making of the Atomic Bomb*, p. 734; 740.

<sup>83</sup> See e.g. Rufus E. Miles, 1985, pp. 121-140.

<sup>84</sup> Steed, 2002, *Armed Conflict – The Lessons of Modern Warfare*, p.188.

<sup>85</sup> For thorough and controversial contributions to the debate whether allied conventional and nuclear strategic bombing was "genocidal", See Markussen and Kopf, 1995; Lifton and Markusen, 1990. Leo Kuper, one of the world's foremost genocide scholars, in 1981, p.46, asserted that the term "genocide" should be applied to the atomic bombing of the Japanese cities of Hiroshima and Nagasaki by the U.S.A. and to the pattern bombing by the Allies of such cities as Hamburg and Dresden." More recently, in Andreopoulos (ed.), 1994, Kuper wrote, p.35, "I should have added the firebombing of Tokyo." Kuper is not the only scholar to label strategic bombing, of which the atomic bombings of Hiroshima and Nagasaki were the apotheosis, as genocidal. In an 1982 article accusing both Japan and the United States of committing war crimes during World War II, Shigetoshi Iwamatsu called the atomic bombs "genocide weapons" and claimed that "the devastation [they caused] might be termed genocide..." pp.32, 35, respectively. Even Jack Nusan Porter in Porter, (ed.), 1982, p.16, labeled the atomic bombings an example of "questionable genocide" in the same article in which he decried inappropriate application of the term. Schabas, 2000, writes, p.205, that "[debate] about the incompatibility of nuclear weapons with the prohibition of genocide has been around since 1948." Schabas quotes Judge Weeramantry of the International Court of Justice, 1996: "'If the killing of human beings, in numbers ranging from a million to a billion, does not fall within the definition of genocide, one may ask what will.'" p.204. In Schabas' own view, "...situations of mass killing such as those occasioned by the use of nuclear weapons are better examined from the perspective of crimes against humanity or war crimes." p.205.

<sup>86</sup> Telford Taylor, *Nuremberg and Vietnam: An American Tragedy*, New York, Quadrangle Books, 1970, p. 89.

<sup>87</sup> Quoted in "Misjudgment at Nuremberg," a review essay by Istvan Deak of Taylor's *The Anatomy of the Nuremberg Trials: A Personal Memoir* (Knopf, 1993), in *The New York Review of Books*, Vol. XL, No. 16, October 7, 1993, p. 50.

<sup>88</sup> Quoted in Schaffer, *Wings of Judgment: American Bombing in World War II*, New York and Oxford, Oxford University Press, 1985, p. 164.

<sup>89</sup> Quoted in Kaplan, *The Wizards of Armageddon*, p. 232. However, just a few years later, when the Navy had its own nuclear weapons, it strongly advocated for deterrence based on the threat of destroying enemy cities and lobbied Congress for increased appropriations in order to build up its own nuclear capability. *Ibid.*, p.235.

<sup>90</sup> Quoted in Richard Minear, *Victor's Justice: The Tokyo War Crimes Trial*, Princeton, NJ, Princeton University Press, 1971, pp. 100-101.

<sup>91</sup> Walzer, *Just and Unjust Wars*, p. 264.

<sup>92</sup> R. J. Rummel, "Power Kills; Absolute Power Kills Absolutely," *Internet On The Holocaust and Genocide*, No. 38, June, 1992, p. 10.

<sup>93</sup> About Japan: Col. John A. Warden III, USAF, 1989, in *The Air Campaign – Planning for Combat*, writes that "...the Japanese had lost air superiority over the home Islands. Previous loss of trained personnel and obsolescent aircraft made it nearly impossible to resist the marauding American bombers." p.53.

<sup>94</sup> Garrett, *Ethics and Airpower in World War II*, pp. 142-143.

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<sup>95</sup> Carr, 2002, p.181.

<sup>96</sup> Herken, *Counsels of War*, p. 23.

<sup>97</sup> For a discussion of American racist attitudes and actions toward Japanese (and vice versa) during and after World War II, see also Lewis and Steele, 2001.

<sup>98</sup> John Dower, *War Without Mercy: Race and Power in the Pacific War*, New York: Pantheon Books, 1986, p. 172.

<sup>99</sup> Dower, *War Without Mercy*, p. 173.

<sup>100</sup> Paul Boyer, *By the Bomb's Early Light: American and Culture at the Dawn of the Atomic Age*, New York Pantheon Books, 1985, p. 25.

<sup>101</sup> Fred Kaplan, *The Wizards of Armageddon*, New York, Simon & Schuster, 1983, p. 52.

<sup>102</sup> Kaplan, *The Wizards of Armageddon*, p. 52.

<sup>103</sup> Gregg Herken, *Counsels of War*, New York, Alfred A. Knopf, 1985, p. 76.

<sup>104</sup> Kaplan, *The Wizards of Armageddon*, p. 40.

<sup>105</sup> Herken, *Counsels of War*, p. 29.

<sup>106</sup> Kaplan, *The Wizards of Armageddon*, p. 209. Mason, 2000, writes that in 1949, when NATO was formed, it was decided that according to NATO strategic concept, each member nation should undertake the tasks best suited for them. For America, this included: "...[ensuring] the ability to carry out strategic bombing promptly by all means possible with all types of weapons, without exception." p.86.

<sup>107</sup> David Alan Rosenberg, "A Smoking, Radiating Ruin at the End of Two Hours: Documents on American Plans for Atomic War with the Soviet Union, 1954-55," *International Security*, Vol.6, Winter 1981/82, pp. 18-19.

<sup>108</sup> William Arkin and Peter Pringle, *SIOP: The Secret U.S. Plan for Nuclear War*, London, Sphere Books, 1983, pp. 45-47.

<sup>109</sup> Herken, *Counsels of War*, 1985, p. 94.

<sup>110</sup> Quoted in Herken, *Counsels of War*, p. 95.

<sup>111</sup> Herken, *Counsels of War*, p. 96.

<sup>112</sup> Quoted in Herken, *Counsels of War*, p. 97.

<sup>113</sup> Quoted in Kaplan, *The Wizards of Armageddon*, p. 134.

<sup>114</sup> Rosenberg, "A Smoking, Radiating Ruin at the End of Two Hours," pp. 15-16. Mason, 2000, notes that even though the will was there, "[few] people were aware in 1946 and 1947 that the USAF would have had great difficulty in implementing its strategy. Not only was there a very small number of atomic weapons available, but in January 1947 SAC had only six Weapons technicians available to arm such bombs, only 10 modified B-29 aircraft operational and 20 trained crews." p.84. See also Walter J. Boyne, 1997, *Beyond the Wild Blue - A History of the U. S. Air Force 1947-1997*, p.3.

<sup>115</sup> Rosenberg, "A Smoking, Radiating Ruin at the End of Two Hours," p. 18.

<sup>116</sup> Arkin and Pringle, *SIOP*, p. 44; p. 115; Rosenberg, "A Smoking, Radiating Ruin at the End of Two Hours," p. 39. From our perspective, it is imperative to emphasize that millions of completely innocent people who happened to live in neutral nations in the paths of radioactive fallout would have been slaughtered had such a plan been put into operation.

<sup>117</sup> Thomas Powers, "Choosing a Strategy for World War III," *The Atlantic Monthly*, Vol. 250, No. 5, 1982, p. 92.

<sup>118</sup> Nash, "Bureaucratization of Homicide," p. 22.

<sup>119</sup> Quoted in York, *The Advisors*, pp. 156-157.



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<sup>120</sup> Robert Kennedy, *Thirteen Days: A Memoir of the Cuban Missile Crisis*, New York, Norton, 1971, p. 22.

<sup>121</sup> Richard Smoke, *National Security and the Nuclear Dilemma*, Reading, MA, Addison-Wesley, 1984, p. 117.

✓ <sup>122</sup> Quoted in Martin Tolchin, "U.S. Underestimated Soviet Force in Cuba in '62," *The New York Times*, January 15, 1992, 1992, p. A6.

<sup>123</sup> Fursenko and Naftali, 1999 (orig. version 1997), p.355.

✓ <sup>124</sup> McNamara, in Bruce and Milne, (eds.), 1999, *Ending War – The Force of Reason*, pp.96-97. See also Joseph Rotblat, *ibid*, p.167.

<sup>125</sup> Lifton and Markusen, *The Genocidal Mentality*, p. 173.

<sup>126</sup> Ellsberg, "Call to Mutiny," in E. P. Thompson and Dan Smith, (eds.), *Protest and Survive*, New York and London, Monthly Review Press, 1981, p. iv. Ellsberg was intimately involved in the development of American nuclear weapons policies, serving on a Joint Staff Study Group on Survivability of National Command and Control of Nuclear Weapons in 1960, on a Defense Department Task Force on Limited War Research and Development in 1961, and as a member of two high-level working groups reporting to the Executive Committee of the National Security Council during the Cuban Missile Crisis of 1962, among other relevant positions.

*See also Fursenko*

<sup>127</sup> Quoted in Lifton and Markusen, *The Genocidal Mentality*, 1990, p. 213.

<sup>128</sup> McNamara, in Bruce and Milne, (eds.), 1999, *Ending War – The Force of Reason*, p.93.